

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

WALTER M. DICKIE, M. D., DIRECTOR

Weekly



Bulletin

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EDITOR

MALARIA IS AN OLD RESIDENT OF CALIFORNIA

The first appearance of malaria in California has been attributed, by many writers, to the migration in the "days of '49" of gold seekers who suffered from the disease. Other writers have ascribed its presence in California to the importation of Italian laborers, supposedly malaria carriers, in 1856, when the Sacramento Valley Railroad running from Sacramento to Folsom was constructed. This railroad, it may be remarked in passing, was the first railroad ever built in California. Doctor Philip King Brown, in an article upon malaria in California published in the Occidental Medical Times July, 1899, p. 389, refers to the report of a medical officer attached to General John C. Fremont's expedition to Oregon in 1846. This officer stated that the health of the native Californians in the interior valleys of the state, notably "the Great Valley of the Sacramento," was very good excepting for the fact that large numbers of them seemed to suffer severely from a remittent fever. It would appear, from this early report, that malaria was probably imported into the state long before the American invasion, presumably having been brought by the Spaniards. Dr. V. J. Fourageau of San Francisco wrote in 1848, "Some portions of the Sacramento and San

Joaquin valleys are subject to bilious remittent and intermittent fevers during the autumnal months, but the general salubrity of California has justly become a proverb."

Medical men in the early '50s and '60s, as well as during later decades, ascribed the presence of malaria in the state to the miasmas rising from swamps and low marshy places. One of the early writers, Dr. Thomas M. Logan, who was the first secretary of the California State Board of Health, even went so far as to advance the theory that malaria was caused by the miasma rising from decayed vegetable matter in still, shallow pools of water. This came very close to the true transmissive factor in malaria, the *anopheles* mosquito, which breeds under the exact conditions which Dr. Logan ascribed as conducive to malaria. The classification of deaths from fevers in the early medical history of the state is most confusing, and it is impossible to even guess the numbers of cases and deaths from the disease that occurred during the early decades. It is safe to assume, however, that the numbers of cases and the numbers of deaths were very great. The thousands of people who were flocking into California during the early years probably possessed little

or no immunity to the disease, and, since many of them suffered severely from hardships encountered while en route to the Golden State, their physical conditions probably would not enable them to resist the attack of any disease which is so debilitating and so devastating as malaria.

In the early '70s a great deal was written about the value of planting eucalyptus trees in the prevention of malaria. A number of medical men urged that eucalyptus trees be planted widely throughout the state for the purpose of controlling malaria. There was considerable agitation against irrigation in the early '80s, as some medical men believed that irrigation, which was in its infancy, would produce the conditions that give rise to the spread of malaria. Doctor Chester Rowell of Fresno, who was a member of the California State Board of Health in 1880, wrote an article in defense of irrigation, in which he stated that if irrigation methods were employed properly, and if water were not permitted to escape from irrigation ditches and allowed to stand in pools, there could be no influences deleterious to health that might come from the use of irrigation. Even as late as 1916 great fear was expressed lest the new industry of rice culture in the Sacramento Valley might provide extensive areas in which the malaria-bearing mosquitoes might thrive and thus cause the spread of malaria throughout the state. Investigations undertaken by the California State Board of Health determined, however, the presence of some factor in the rice fields, probably blue-green algae, which inhibits the development of mosquito larvae. Other investigations, undertaken by the Board, established the fact that the maintenance of leaky irrigation ditches with the resultant formation of pools of standing water may be a decided factor in the production of *anopheles* mosquitoes.

It is certain that malaria, while still a problem in California, does not begin to have the magnitude that it once had. To be sure, the disease is not thoroughly reported and it is reasonable to assume that there are a great many cases that never come to the attention of physicians or other individuals whose duty it may be to report such cases. Comparatively few deaths from malaria occur within the state. Agricultural laborers, however, suffer considerably from this disease, and in

some districts of the state malaria has been, and is now, a factor in retarding the agricultural growth and development of many communities. The organization of mosquito abatement districts, which began following an enabling act of the legislature in 1915, has no doubt accomplished certain results in checking the spread of the disease in some communities where it has existed for unknown periods of time. Control work instituted in Placer County and in Butte County many years before the passage of the mosquito abatement district act was productive of results, but it was not until 1921 that malaria in these counties, as well as in other counties of the Sacramento Valley, really began to approach the vanishing point. Malaria is reported each year in San Francisco, Los Angeles and other cities of the state where extensive facilities for treatment and hospitalization are available. Of course, cases of the disease are not contracted in any of the metropolitan communities, where conditions favorable to the development of the *anopheles* mosquitoes are entirely absent.

At the present time the malarial districts of the state are confined to decidedly limited areas in the northern part of the Sacramento Valley and intensive work in the control of the disease is being applied in all such districts. Investigations undertaken by Dr. Paul S. Carley if the International Health Board in 1925 substantiated the fact that this disease, long called the Minotaur of California, is now reduced to a state of great docility.

The total number of deaths, recorded annually from malaria in California has never exceeded 100, with the exception of the years 1906 to 1912, inclusive, and there have never been more than 1,000 cases reported during any one year, with the exception of 1919, when a special investigation undertaken by the California State Board of Health in Anderson, Shasta County, stimulated the reporting of about 500 cases. The disease, during that year, was undoubtedly equally prevalent in many other communities throughout the state, but machinery for finding, diagnosing and reporting cases of the disease was not available as it was in Anderson where intensive work was applied. In 1926 there were but 94 cases and 9 deaths from malaria reported in California. This represents the lowest mortality ever

recorded during a single year since state mortality registration began in 1906.

Following are the numbers of cases and deaths from malaria reported since 1913, when morbidity registration began, together with mortality from 1906, when the vital statistics registration act became effective in California.

Year	Cases	Deaths
1906 -----	---	111
1907 -----	---	70
1908 -----	---	80
1909 -----	---	112
1910 -----	---	113
1911 -----	---	121
1912 -----	---	101
1913 -----	77	77
1914 -----	342	70
1915 -----	527	45
1916 -----	935	54
1917 -----	749	47
1918 -----	667	55
1919 -----	1,055	28
1920 -----	484	34
1921 -----	269	43
1922 -----	215	31
1923 -----	196	32
1924 -----	107	24
1925 -----	77	29
1926 -----	94	9
1927 -----	58	15

In 1922 the International Health Board lent the services of an engineer trained in mosquito control to the California State Board of Health. He made extensive surveys which covered the entire state and, under his directions, many large projects for the control of malaria and mosquitoes were undertaken. In April of 1922 top-minnows, the *Gambusia Affinis*, were imported into California from Texas. A number of breeding pools were established by the Board and within a short time the distribution of these destroyers of mosquito larvae began. There are now many millions of these small fish in California and their presence has played no small part in the control of mosquitoes and malaria.

California's malaria and mosquito problem is not exactly the same as similar problems encountered in other parts of the United States. The climate and the topography of California varies tremendously, and no single measure is everywhere applicable for keeping mosquitoes in check. Practically all known methods of control such as drainage, ditching, oiling

and insecticides must be used. While the accomplishments achieved are outstanding and the disease at the present time is at its lowest ebb, it would be a serious mistake to discontinue or to relax in the pursuance of the methods which have been applied so successfully. The economic development of California is definitely concerned with the elimination of malaria from the great interior valleys, and in order to insure continued prosperity in the agricultural districts affected it is necessary that control measures be carried on continuously.



More Diseases Made Reportable.

Tularemia and coccidioidal granuloma were made reportable diseases by the State Board of Public Health at its last meeting, June 2, 1928. Health officers are requested to notify physicians in the respective territories under their jurisdiction in order that reports of any cases of these diseases that may come under observation shall be reported without delay.



Permits Pending For Sewage Disposal.

The following applications for permits are pending before the State Board of Public Health, final action to be taken at the next meeting of the board, to be held in San Francisco, June 30, 1928:

Chico—Application for permit to install a separate sludge digestion plant at the city sewer farm.

San Luis Obispo—Application for permit to install Hardinge sewage clarification works at the city farm and continue use of the farm.



MORBIDITY.*

Diphtheria.

79 cases of diphtheria have been reported, as follows: Oakland 9, Piedmont 1, Los Angeles County 5, Alhambra 1, Burbank 1, Huntington Park 1, Long Beach 3, Los Angeles 23, Pasadena 4, Pomona 1, Santa Monica 1, Whittier 6, South Gate 1, Napa 1, Anaheim 2, San Clemente 1, Riverside County 1, Hollister 1, Redlands 1, San Francisco 12, San Joaquin County 1, Mountain View 1, Tulare County 1.

Scarlet Fever.

128 cases of scarlet fever have been reported, as follows: Alameda 2, Albany 1, Berkeley 3, Oakland 8, Butte County 1,

*From reports received on June 18th and 19th, for week ending June 16th.

Fresno County 1, Bakersfield 1, Los Angeles County 8, Glendora 1, Huntington Park 1, Long Beach 2, Los Angeles 13, Torrance 1, South Gate 1, Sausalito 1, Orange 1, Santa Ana 1, Sacramento 11, Ontario 1, Coronado 1, National City 1, San Diego 2, San Francisco 24, San Joaquin County 5, Stockton 10, San Luis Obispo 1, San Mateo County 1, Mountain View 1, Palo Alto 2, San Jose 14, Shasta County 2, Benicia 1, Vallejo 2, Santa Rosa 1, Santa Paula 1.

Measles.

49 cases of measles have been reported, as follows: Berkeley 1, Oakland 4, Piedmont 1, Fresno 1, Callexico 2, Los Angeles County 4, Long Beach 3, Los Angeles 17, Pasadena 1, Sacramento 1, National City 4, San Francisco 8, Mountain View 1, Vallejo 1.

Smallpox.

18 cases of smallpox have been reported, as follows: Berkeley 1, Oakland 2, Colusa 1, Los Angeles 1, Colfax 1, Sacramento 2, San Francisco 1, Manteca 9.

Typhoid Fever.

12 cases of typhoid fever have been reported, as follows: Butte County 1, Los Angeles 1, Monterey 1, San Francisco 2, San Joaquin County 1, Stockton 2, Solano County 2, Sonoma County 1, Yolo County 1.

Whooping Cough.

225 cases of whooping cough have been reported, as follows: Berkeley 8, Oakland 3,

Piedmont 1, Butte County 4, Fresno 1, Kings County 2, Los Angeles County 13, Alhambra 1, Compton 1, El Segundo 2, Huntington Park 3, Long Beach 2, Los Angeles 64, Pasadena 8, Pomona 1, South Gate 3, Marin County 2, Sausalito 1, Merced 2, Carmel 6, Pacific Grove 1, Fullerton 4, Sacramento 5, Chula Vista 8, San Diego 22, San Francisco 22, San Joaquin County 6, Stockton 26, Santa Barbara County 1, Santa Rosa 2.

Meningitis (Epidemic).

3 cases of epidemic meningitis have been reported, as follows: Susanville 1, Long Beach 1, Sacramento 1.

Poliomyelitis.

4 cases of poliomyelitis have been reported, as follows: Oakland 1, Los Angeles County 2, Sacramento 1.

Encephalitis (Epidemic).

Shasta County reported one case of epidemic encephalitis.

Food Poisoning.

Sacramento reported 4 cases of food poisoning.

Leprosy.

Los Angeles reported one case of leprosy.

Rabies (Human).

Los Angeles reported one case of human rabies.

COMMUNICABLE DISEASE REPORTS

Disease	1928				1927			
	Week ending			Reports for week ending June 16 received by June 19	Week ending			Reports for week ending June 18 received by June 21
	May 26	June 2	June 9		May 28	June 4	June 11	
Anthrax	0	0	0	0	0	0	0	0
Botulism	0	0	0	0	0	3	0	0
Chickenpox	592	507	505	340	331	286	332	286
Diphtheria	88	79	84	79	141	121	114	93
Dysentery (Bacillary)	2	0	1	0	1	2	1	2
Encephalitis (Epidemic)	0	0	2	1	1	1	1	1
Food Poisoning	1	0	11	4	0	0	0	0
German Measles	261	251	206	117	119	76	88	71
Gonococcus Infection	84	86	141	96	117	97	94	84
Influenza	55	30	41	22	19	12	16	10
Jaundice (Epidemic)	0	1	0	0	0	0	2	1
Leprosy	1	0	0	1	0	1	2	1
Malaria	0	0	1	1	0	1	1	1
Measles	97	92	75	49	1,117	960	727	571
Meningitis (Epidemic)	3	3	3	3	10	9	5	7
Mumps	329	279	256	217	248	202	180	156
Paratyphoid Fever	1	0	1	1	0	0	1	0
Pneumonia (Lobar)	42	35	38	42	44	41	112	40
Poliomyelitis	2	6	9	4	8	7	6	14
Rabies (Animal)	18	15	7	23	4	5	16	8
Rabies (Human)	0	0	0	1	0	0	0	0
Rocky Mt. Spotted Fever	0	1	0	0	0	0	0	0
Scarlet Fever	167	160	134	128	136	170	156	136
Smallpox	13	36	11	18	24	21	23	13
Syphilis	111	90	196	169	96	129	83	144
Tetanus	2	3	2	2	2	1	0	1
Trachoma	1	2	2	2	2	3	6	1
Trichinosis	0	0	0	0	0	0	0	0
Tuberculosis	196	162	262	185	212	207	264	178
Typhoid Fever	17	15	14	12	15	9	13	8
Typhus Fever	0	0	0	0	0	0	0	0
Whooping Cough	284	236	341	225	235	224	215	191
Totals	2,367	2,089	2,343	1,742	2,882	2,588	2,458	2,018